

## REMARKS

This application has been carefully reviewed in light of dated December 17, 2004. The Abstract has been amended and each of the claims has been amended, directly or via dependency. Reconsideration and full allowance are respectfully requested.

In the Examiner's action, the Examiner objected to the Abstract because it contains reference numbers in parentheses. The Abstract has been amended to overcome this objection.

The substantive rejection of the claims is addressed in detail below. First, the general subject matter of the invention is summarized by way of introduction and then the specific rejections by the Examiner are addressed with respect to each claim set.

### **Introduction**

The present invention is generally directed to converting the content of electronic information from one form to another. In this regard, the subject content is human directed information. Such information is distinguished from machine language such as software or hardware code. The transformation may involve translating the content from one (human) language to another or between specific terminologies and syntax used by different companies or other entities or different locales.

There are a number of problems that arise in connection with transforming such human directed content. For example, such content may include abbreviations, misspellings, unstandardized grammar, slang, or other idiosyncratic matter. This has generally made even partially automated transformation impractical for many applications.

In a preferred implementation, the present invention involves standardizing information to facilitate the transformation process. For example, all of the terms found in a database or other source data collection may be mapped to a set of standardized terms with associated standardized grammar rules. The resulting standardized information generally represents a reduced set of elements for transformation as well as adhering to a standardized grammar to facilitate such transformation. Thus, an intermediate form is interposed in the transformation process. That is, a machine tool for use in transforming content from a first semantic environment to a second semantic environment may involve transforming the content into an intermediate form, e.g., a third semantic environment.

In this regard, these source elements are preferably uniquely associated with the transformation elements (e.g., intermediate and/or target elements). Thus, for example, multiple forms of a particular source object, such as abbreviated forms, misspelled forms, etc., may be mapped to a single standardized form. Such a direct mapping process can be readily implemented by a machine based tool, for example, for substantially real-time transformations, and avoids the subjectivity and underdetermination characteristic of other translation tool models.

As discussed in more detail below, the Examiner has cited patents that relate to machine language translation tools. Such tools, while useful for the associated applications, are not directed to transforming human directed content and do not address the associated issues as noted above. The Examiner has also cited patents relating to a human language translation tool including one that involves an effort to match an input content structure to each of multiple example structures and select a best match based on a scoring process. Each of these cited patents is thus directed to a substantially different process than that of the present invention as described above. The distinctions relative to the specific subject matter claimed in the various claim sets are addressed below.

### **The first claim rejection**

The Examiner rejected Claim 21 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,829,759 by Davis, et al. ("Davis"). Applicant does not admit that Davis is prior art. However, the subject matter of Claim 21 is believed to be patentably distinguished from Davis for the reasons set forth in detail below.

Claim 21 is directed to a method for use in facilitating electronic communication between first and second user systems that operate in first and second different semantic environments. Specifically, human directed content is converted between the first and second semantic environments. The method involves obtaining input information in a first form reflecting the first semantic environment, using a computer-based processing tool to generate processed information, and converting the processed information into a second form reflecting the second semantic environment. For example, the processed information may be an intermediate form in the conversion process as discussed above. As set forth in the claim, the processed information includes a first content corresponding to the input information and second content regarding a

context of a portion of the first content for use in transforming the information. For example, such context may identify a subject matter context of a term such that the term can be disambiguated. Thus, if the subject matter context is “valves”, the machine tool may properly process the term “butterfly” in the phrase “butterfly valve.” Such context may be indicated, for example, by way of tags (e.g., XML tags) or the like. In generating the processed information, the noted portion of the first content is uniquely associated with an element of the second semantic environment based on the context. Thus, a mapping process is defined which can be readily implemented by a machine tool without requiring a comparative analysis such as result arbitration and substantially without subjectivity or ambiguity with regard to the transformation.

Davis is directed to translation systems for computer programs. See, e.g., the “technical field of the invention” of Davis at col. 1, lines 25-29. Specifically, Davis addresses compatibility issues relating to digital signal processor chips. In this regard, Davis notes that as new DSP chips replace older DSP chips the assembly language used in the new chips is often different from that of the old chips. Thus, the assembly language programs for the old chips must be rewritten for the new chips.

Applicant respectfully submits that Davis does not disclose a method for use in converting the human directed content of electronic information as specifically set forth in Claim 21. As noted above, the present invention addresses problems that are specific to transforming human directed content. Applicant therefore respectfully submits that Claim 21, is patentably distinguished from Davis and this rejection should be withdrawn.

### **The second claim rejection.**

Claims 1-13 were rejected under 35 U.S.C. § 103 as being unpatentable over Davis in view of U.S. Patent No. 6,035,121 by Chiu, et al. (“Chiu”). Applicant does not admit that either of these patents constitutes prior art. However, Applicant submits that the claimed subject matter is patentably distinguishable over the proposed combination as set forth in detail below.

Claim 1 is directed to a method for use in facilitating electronic communication between first and second user systems that operate in first and second different semantic environments. Specifically, the human directed content is converted between the first and second semantic environments. This conversion involves the use of a third semantic environment, e.g., an intermediate form as discussed above. More specifically, the method of Claim 1 involves

accessing a first quantity of information reflecting the first semantic environment where the first quantity of information defines a first data collection. A computer-based processing tool is operated using the data collection to identify a set of first semantic elements that at least partially define the first semantic environment. The computer-based operating tool is further operated to process a second quantity of information relative to the identified set of semantic elements to convert at least a portion of the second quantity of information into a third semantic environment, thereby providing one or more converted semantic elements. The second quantity of information relates to the content under consideration and reflects the first semantic environment. In this regard, the second elements of the second quantity of information are uniquely associated with the converted semantic elements. The converted semantic elements are then used to process the electronic communication under consideration. Thus, a third semantic environment such as an intermediate semantic environment is used in converting human directed content between first and second semantic environments.

As discussed above, Davis is directed to translating the assembly language used in connection with older DSP chips to that used in connection with newer DSP chips. Accordingly, Davis does not disclose a method for converting the human directed content of electronic information between first and second forms, much less such conversion using a third semantic environment as specifically set forth in Claim 1.

Chiu is directed to localizing computer software. Specifically, menus, dialog boxes and like resource information of a computer program, such as a web browser, are translated from one human language to another human language. Chiu requires that the resource information be stored in a dynamic link library. To translate the resources, the current version resource DLL is compared by a leverage tool to a resource DLL of a previous version of the program, e.g., a beta version. The current version DLL is also compared to the resource DLL of any translation of the previous version to the target language. The leverage tool then generates a new target language resource DLL. Any content that was previously translated in connection with the previous version is stored. Strings that are not to be translated are locked. Thus, already translated content is reused and locked strings are not translated such that the effort required by a translator is reduced.

Applicant respectfully submits that Chiu does not disclose a process for converting human directed content between first and second semantic environments that involves converting

information into a third semantic environment. Specifically, in Chiu, the DLLs are used to translate specific terms or strings directly from a source language to a target language. It is noted that the actual translation is apparently performed manually in the first instance where the dynamic link libraries merely provide a convenient reference to previously translated information. Thus, neither Davis nor Chiu discloses a process for converting human directed content between first and second semantic environments that involves the use of a third semantic environment (e.g., in intermediate form), as claimed. Therefore, the proposed combination would not yield the claim subject matter.

In any event, it is respectfully submitted that the proposed combination is improper. As noted above, Davis is specifically directed to translating as between different assembly languages of different DSP chips and is thus directed to machine language translation. Chiu is directed to translating certain human directed content of computer programs. In this regard, Chiu specifically requires that “the resource DLL of the current version of the program is first separated from the executable code.” Col. 2, lines 59-61. Thus, Davis is specifically limited to machine language and the leverage tool of Chiu is specifically limited to the human directed content. It is therefore unclear how the Davis and Chiu patents could be operatively combined as proposed by the Examiner. For all the foregoing reasons, Applicant respectfully submits that the second substantive rejection should be withdrawn.

### **The third rejection of the claims.**

Claims 14-17 were rejected under 35 U.S.C. § 103 as being unpatentable over Davis. As noted above, Applicant does not admit that Davis is prior art. In any event, Applicant respectfully submits that the subject matter of these claims is patentably distinguished from Davis for the reasons set forth in detail below.

Independent Claim 14 is directed to a method for use in facilitating electronic communication between first and second user systems that operate in first and second different semantic environments. Specifically, the method relates to converting the human directed content between the first and second semantic environments. The method involves converting at least a portion of the content into a third semantic environment that is different from both the first and second semantic environments and using this converted portion of the content to process the communication under consideration. Thus, the claimed subject matter involves the use of a

third semantic environment, such as an intermediate form, in the conversion of human directed content.

As noted above, Davis is directed to converting between first and second assembly languages associated with different DSP chips. Davis therefore does not recognize or address the unique problems associated with converting human directed content as discussed above. Specifically, Davis does not disclose or suggest a method for converting human directed content between first and second semantic environments, much less a process involving the use of a third semantic environment as specifically set forth in Claim 14. Applicant therefore respectfully submits that Claim 14 is patentable over Davis and this rejection should be withdrawn.

**The fourth rejection of the claims.**

Claims 18-20 and 22-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Davis in view of U.S. Patent No. 6,546,406 by DeRose, et al. ("DeRose"). Applicant does not admit that either of these patents is prior art. Nonetheless, the noted claims are believed to be patentable over the proposed combination for the reasons set forth in detail below.

Independent Claim 18 is directed to a method for use in standardizing electronic information including human directed content relating to a given subject matter. The method involves the steps of providing a collection of information reflecting a first semantic environment, parsing content of the collection into a set of chunks and providing a user interface to select specific chunks for processing, defining a standardized semantic environment including a set of standardized semantic elements, using a computer-based processing tool to select a chunk and map the selected chunk to a standardized semantic element where the chunk is uniquely associated with the semantic element, and repeating this process until a desired portion of the chunks are mapped into the set of standardized semantic elements. Thus, an interface is provided for convenient standardization of human directed content, such as to facilitate conversion thereof. In this regard, as discussed above, such human directed content often involves substantial idiosyncratic matter that could otherwise complicate such conversions.

As discussed above, Davis involves translating between first and second assembly languages associated with different DSP chips. Davis thus does not address any problems associated with human directed content much less set forth a method for standardizing such content as specifically set forth in Claim 18.

DeRose is directed to a client-server computer system for retrieval of electronically published documents. Specifically, DeRose involves translating documents between one mark-up language and another mark-up language. In this regard, a mark-up language provides indications of structure of the documents but excludes streams of display instructions which are typically found in formatted documents. Thus, elements in a first markup language such as SGML can be mapped to markup elements in another markup language such HTML. Thus, DeRose does not disclose the use of a computer-based processing tool to parse human directed content into chunks and provide a user interface for selecting specific chunks for processing whereby chunks can be mapped to standardized semantic elements. Applicant therefore respectfully submits that the proposed combination of Davis and DeRose would not yield the subject matter of Claim 18.

In any event, Applicant submits that the proposed combination is improper. As noted above, Davis is specifically directed to translating between different assembly languages associated with different DSP chips. DeRose is directed to translating between different markup languages. Such markup languages specifically exclude graphic display instructions and the like that are found in formatted documents. It is thus unclear how Davis and DeRose could be operatively combined as proposed by the Examiner. For all of the foregoing reasons, Applicant respectfully submits that Claim 18 and its dependent claims are patentable over the proposed combination.

Claims 22-24 depend from independent Claim 21. As discussed above, independent Claim 21 is directed to a method for transforming human directed content between first and second semantic environments that involves generating processed information, such as information in an intermediate form, that includes context information for use in transforming the information between the first and second semantic environments. As discussed above, Davis does not involve converting human directed content between first and second forms, much less by generating processed data including context information. Rather, Davis is directed to translating between different assembly languages associated with different DSP chips. Similarly, DeRose does not disclose a method for converting human directed content between first and second semantic environments involving generating processed information including context information. Applicant therefore respectfully submits that the proposed combination does not yield the subject matter of Claims 22-24. Moreover, as noted above, Applicant respectfully

submits that the proposed combination of Davis and DeRose is improper. Applicant therefore respectfully submits that this rejection should be withdrawn.

**The fifth rejection of the claims.**

The Examiner rejected Claims 25-32 under 35 U.S.C. § 103 as being unpatentable over Davis in view of U.S. Patent No. 6,330,530 by Horiguchi, et al. (“Horiguchi”). Applicant does not admit that the cited patents are prior art. However, Applicant respectfully submits that the noted claims are patentable over the proposed combination for the reasons set forth in detail below.

Independent Claim 25 is directed a method for converting human directed content between first and second semantic environments. The method involves providing a computer-based tool having access to a knowledge base reflecting one of the first and second semantic environments. A communication for transmission between first and second user systems is accessed and the computer-based tool is operated to transform, in substantially real-time, first content relative to a source semantic environment so as to provide transformed content where an element of the first content is uniquely associated with a transformation element. As discussed above, such direct mapping of the source elements to transformation elements allows for efficient transformation so as to facilitate substantially real-time transformations as claimed. Moreover, such direct mapping avoids comparative analysis of parallel transformation processes, e.g., result arbitration, for efficient transformations with reduced ambiguity or subjectivity.

As noted above, Davis is directed to translating between different assembly languages associated with different DSP chips. Davis therefore does not recognize the problems associated with transforming human directed content, much less does Davis disclose the claimed process for addressing such problems.

Horiguchi is directed to a translation tool for translating text between first and second human languages. Specifically, Horiguchi involves matching input content such as a phrase to multiple examples of an example database. Thus, in one example provided by Horiguchi, the input sentence “I have a long pencil” is matched to the example structures “I have a pencil” and “I had a long nap.” Such matching is accomplished by iteratively comparing the source structure to example structures and implementing a scoring process that involves determining a match cost between a source structure and each source language example feature structure to determine if the match between the two structures is close. The best match may be selected for use in a




translation or multiple matches may be combined in this regard. Thus, Horiguchi involves multiple parallel or iterative potential transformation processes together with a scoring process to determine which examples to use in the translation. Applicant therefore respectfully submits that Horiguchi does not disclose a method for use in transforming human directed content between first and second semantic environments that involves operating a computer-based tool to transform, in substantially real-time, first content relative to a source semantic environment of the communication to provide transformed content where an element of the first content is uniquely associated with a transformation element.

For the foregoing reasons, Applicant respectfully submits that the proposed combination would not yield the subject matter of independent Claim 25. In any event, Applicant submits that the proposed combination is improper. As noted above, Davis is directed to translation between different assembly languages associated with different DSP chips. Horiguchi is specifically directed to translating human directed content between first and second languages by using an approach that involves comparison to example structures and scoring. It is unclear how the cited patents could be operatively combined as the Examiner has suggested. Applicant therefore respectfully submits that this rejection should be withdrawn.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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